

A NEW SPECIES OF *RONCUS* L. KOCH, 1873,
FROM SOUTHEASTERN EUROPE
(PSEUDOSCORPIONES: NEOBISIIDAE)

BOŽIDAR P. M. ĆURČIĆ

Institute of Zoology, Faculty of Science (Biology), University of Belgrade, Studentski Trg 16, YU-11000 Beograd, Yugoslavia.

Abstract. — A new species of neobisiid pseudoscorpion *Roncus jarilo* is described based on specimens from southeastern Europe (Yugoslavia); and the diagnostic characters are illustrated.

Key Words: Pseudoscorpiones, Neobisiidae, *Roncus*, new species, Yugoslavia

Over the past two decades there has been a marked increase in our knowledge of the Neobisiidae of southeastern Europe (or the Balkan Peninsula), and especially of the representatives of the genus *Roncus* L. Koch, 1873, which occur in leaf litter, soil and caves (Ćurčić 1982, 1988, Harvey 1990). Increased interest in the soil/litter and cave ecosystems and improved sampling techniques have contributed to this knowledge. During a study of postembryonic development and teratology of pseudoscorpions of a continental deciduous oak forest in Yugoslavia, a hitherto undescribed species of *Roncus* was found.

The present paper provides description of *R. jarilo* n. sp., with some details on the comparative morphology of both sexes and tritonymph.

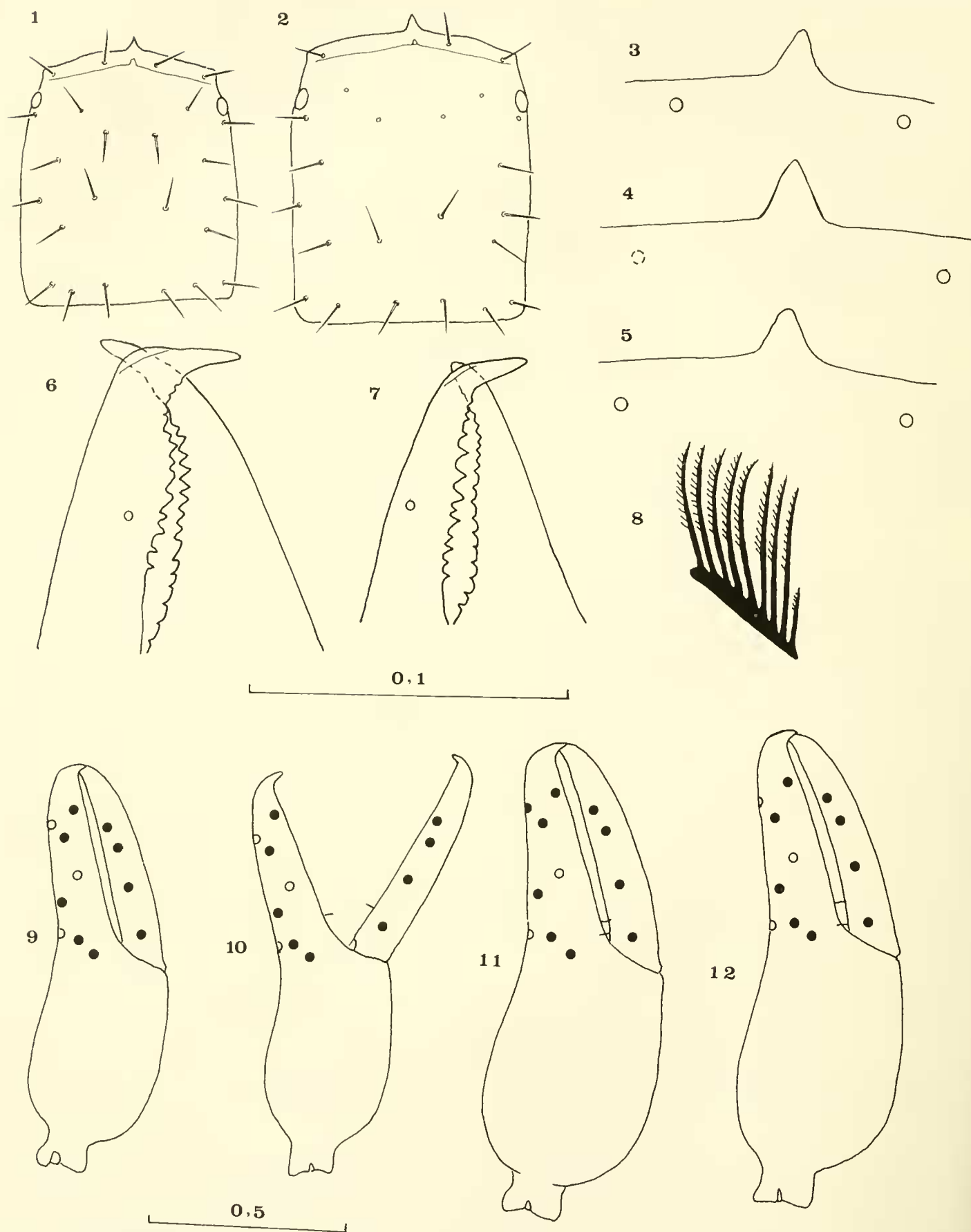
All specimens are mounted on slides in Swan's fluid (gum chloral medium), and all are deposited in the Institute of Zoology, Faculty of Science (Biology), University of Belgrade, Belgrade, Yugoslavia.

Roncus jarilo Ćurčić,
NEW SPECIES

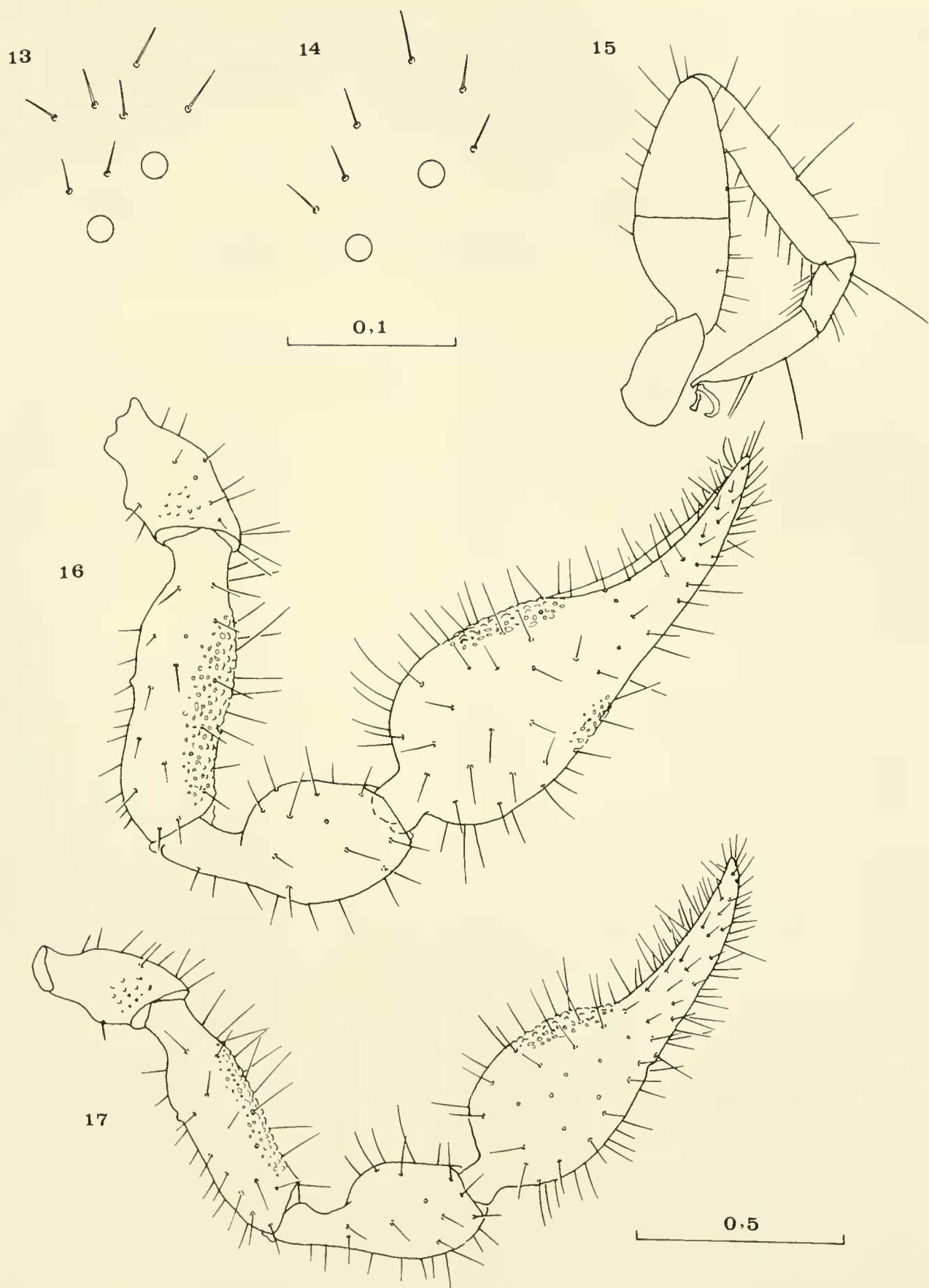
Roncus aff. *lubricus* (B) L. Koch, 1873; Ćurčić, Dimitrijević, Karamata, and Lučić, in press.

Description. — Epistome triangular and apically blunt (Figs. 1–5). Two small eyes present. Setal formulae: $4+6+2+4+2+6 = 24$ (male); $4+6+2+4+2+6 = 24$, $3+6+2+3+3+6 = 23$, $4+1+6+2+3+1+6 = 23$ (female) and $4+6+2+4+2+6 = 24$ setae (tritonymph).

Tergite I with 6 (adult) or 7 setae (tritonymph), tergite II with 8–11 setae, tergites III–X each with 10–12 (rarely 13 or 14) setae. Male genital area: sternite II with a cluster of 13–23 setae medially and posteriorly. Of these, 7–12 longer setae along posterior sternal border and 6–11 shorter setae mid-posteriorly, thinning out anteriorly. Sternite III with 4–8 anterior and median setae, 9–12 posterior setae and 3 (rarely 2) microsetae along each stigma. Sternite IV with 8–13 marginal setae and 3 (rarely 2) small suprastigmal microsetae on each side. Female genital area: sternite II with 7–11 setae either constituting a single patch or arranged into two barely distinguishable groups, one on either side of the mid-line; sternite III with 13 or 14 posterior setae, and 2 or 3 microsetae along each stigma. Sternite IV with 8–10 setae and 3 small suprastigmatic setae on each side. Tritonymph: sternite II with 2 setae, sternite III with 7 posterior setae and 2 or 3 microsetae along each stig-



Figs. 1-12. *Roncus jarilo*, n. sp.: 1, carapace, male; 2, carapace, female; 3, epistome, male; 4, epistome, female; 5, epistome, female; 6, cheliceral fingers, female; 7, cheliceral fingers, male; 8, flagellum, male; 9, pedipalpal chela, male; 10, pedipalpal chela, male; 11, pedipalpal chela, female; 12, pedipalpal chela, female. Scales in mm.



Figs. 13–17. *Roncus jarilo*, n. sp.: 13, microsetae distal to *eb* and *esb*, male; 14, microsetae distal to *eb* and *esb*, female; 15, leg IV, male; 16, pedipalp, female; 17, pedipalp, male. Scales in mm.

Table 1. Range in measurements (mm) of various structures, together with selected ratios, in *Roncus jarilo*, new species.

Character	Females	Males	Trito
Body			
Length (1)	2.85-3.47	2.385-3.08	1.67
Cephalothorax			
Length (2)	0.71-0.79	0.61-0.75	0.44
Brcadth	0.58-0.65	0.50-0.63	0.42
Abdomen			
Length	2.195-2.74	1.715-2.33	1.23
Breadth	1.03-1.37	0.96-1.10	0.60
Chelicerae			
Length (3)	0.445-0.50	0.37-0.445	0.315
Breadth (4)	0.22-0.26	0.19-0.23	0.16
Length of moveable finger (5)	0.29-0.35	0.26-0.31	0.21
Ratio 3/5	1.37-1.55	1.37-1.52	1.50
Ratio 3/4	1.81-2.08	1.89-2.095	1.97
Length of galea	0.01	0.01	0.01
Pedipalps			
Length with coxa (6)	3.35-3.805	2.77-3.53	2.30
Ratio 6/1	1.02-1.27	1.01-1.33	1.38
Length of coxa	0.535-0.61	0.45-0.555	0.40
Length of trochanter	0.42-0.47	0.35-0.445	0.29
Length of femur (7)	0.67-0.775	0.57-0.71	0.46
Breadth of femur (8)	0.21-0.23	0.17-0.21	0.16
Ratio 7/8	3.045-3.38	3.05-3.76	2.875
Ratio 7/2	0.92-1.00	0.91-1.06	1.045
Length of tibia (9)	0.555-0.67	0.46-0.60	0.36
Breadth of tibia (10)	0.26-0.29	0.21-0.28	0.18
Ratio 9/10	2.07-2.31	2.07-2.33	2.00
Length of chela (11)	1.16-1.29	0.92-1.24	0.79
Breadth of chela (12)	0.38-0.44	0.28-0.38	0.25
Ratio 11/12	2.93-3.24	3.13-3.69	3.15
Length of chelal palm (13)	0.58-0.67	0.43-0.62	0.40
Ratio 13/12	1.49-1.63	1.535-1.72	1.60
Length of chelal finger (14)	0.58-0.64	0.49-0.64	0.39
Ratio 14/13	0.925-1.03	0.95-1.185	0.975
Leg IV			
Total length	2.40-2.56	2.03-2.36	1.655
Length of coxa	0.40-0.425	0.33-0.40	0.27
Length of trochanter (15)	0.29-0.33	0.25-0.31	0.21
Breadth of trochanter (16)	0.135-0.15	0.12-0.14	0.11
Ratio 15/16	2.07-2.44	2.07-2.33	1.91
Length of femur (17)	0.63-0.68	0.58-0.665	0.435
Breadth of femur (18)	0.22-0.25	0.18-0.24	0.155
Ratio 17/18	2.60-3.02	2.77-3.105	2.81
Length of tibia (19)	0.55-0.60	0.45-0.61	0.38
Breadth of tibia (20)	0.11-0.12	0.09-0.12	0.09
Ratio 19/20	4.83-5.36	4.96-6.00	4.22
Length of basitarsus (21)	0.205-0.23	0.18-0.23	0.14
Breadth of basitarsus (22)	0.08-0.11	0.075-0.09	0.07
Ratio 21/22	1.91-2.625	2.25-2.59	2.00

Table 1. Continued.

Character	Females	Males	Trito
Length of telotarsus (23)	0.31–0.34	0.29–0.34	0.22
Breadth of basitarsus (24)	0.075–0.08	0.07–0.08	0.065
Ratio 23/24	3.875–4.53	3.94–4.86	3.38
TS ratio—tibia IV	0.475–0.65	0.53–0.61	0.51
TS ratio—basitarsus IV	0.19–0.23	0.175–0.25	0.24
TS ratio—telotarsus IV	0.265–0.36	0.28–0.36	0.28

ma, and sternite IV with 9 marginal setae and 2 microsetae along each stigma. Sternites V–X each with 12–16 setae. In some specimens sternites VII–X each with 2 median setae only slightly anterior to the row of posterior setae; in the others, all marginal setae at the posterior sternal border.

Cheliceral spinneret (galea) low, slightly more prominent in females and tritonymphs than in males (Figs. 6, 7). Cheliceral palm with 6 setae, movable finger with one seta (both in adult and tritonymph). Fixed cheliceral finger with 16–20 (adult) or 14 or 15 small teeth (tritonymph); movable cheliceral finger with 13–15 (adult) or 11 teeth (tritonymph). Flagellum 8- or 9-bladed (1 short proximal blade and 7 or 8 longer blades distally, all blades denticulate; Fig. 8).

Apex of pedipalpal coxa with 4 long acuminate setae. Pedipalpal trochanter with two small lateral tubercles, and some rare and inconspicuous denticulations dorsally. Pedipalpal femur with a small exterior and lateral tubercle and with interior and dorsal granulations as in Figs. 16 and 17. Tibia smooth; chelal palm with anterior granulations; exteriorly, palm with some rare and inconspicuous surface irregularities or completely smooth. No microsetae proximal to *eb* and *esb* (Figs. 13, 14); however, 1–6 microsetae present distal or laterodistal to *eb* and *esb*. A single tubercle present on the laterodistal side of chelal palm. In both sexes, sensillum located between 9th and 15th tooth (either slightly proximal to, slightly distal to, or at the level of *sb*); in tritonymph, it is situated between the 6th and 7th teeth

(somewhat closer to *st* than to *b*). The trichobothrium *ist* closer to *isb* than to *est*. Fixed chelal finger with 46–55 (male), 47–54 (female), and 34 teeth (tritonymph). Movable chelal finger with 42–45 (male), 42–54 (female), and 33 teeth (tritonymph). Chelal fingers generally as long as the chelal palm and shorter than pedipalpal femur (Table 1). Pedipalpal femur shorter than (adult) or equal to carapace (tritonymph; Table 1). Trichobothriotaxy as in Figs. 9–12.

Tibia IV, basitarsus IV, and telotarsus IV each with a single tactile seta (Fig. 15). Tactile seta ratios are presented in Table 1.

Morphometric ratios and linear measurements are presented in Table 1.

Type material. — Holotype ♀, allotype ♂, 9 paratype ♀, 7 paratype ♂, and 1 paratype tritonymph, from the village of Asanovac, Žitoradja, near Prokuplje, Serbia (Yugoslavia), collected from leaf litter in an oak forest, from January to March 1989, by M. S. Zlatković.

Teratology: An anomalous trichobothrial pattern in the number and disposition of the tactile setae *isb*, *eb*, and *esb* in a single female has been described elsewhere (Ćurčić, Dimitrijević, and Lučić 1992). In another female, two additional setae occur on the right part of sternite VI, so that the setae in this region are arranged into an anterior and posterior row.

Remarks. — *Roncus jarilo* resembles the south European *Roncus lubricus pannoni* Ćurčić, Dimitrijević, and Karamata (type locality: village of Obrež, near Belgrade, northern Serbia, Yugoslavia; Ćurčić et al.,

in press) in general appearance, but the ratio of chelal finger length to the length of the chelal palm is different (lower in *R. jarilo*, higher in *R. lubricus pannoniensis*). Other distinctions include the form of the pedipalpal articles (attenuated in *R. lubricus pannoniensis*, robust in *R. jarilo*), the presence/absence of microsetae proximal to *eb* and *esb* (present in *R. lubricus pannoniensis*, absent in *R. jarilo*), the relative position of the trichobothrium *ist* (in *R. jarilo*, it is closer to *isb* than to *est*, and in *R. lubricus pannoniensis* it is closer to *est* than to *isb*), as well as the number of chelal teeth (greater in *R. lubricus pannoniensis*, lower in *R. jarilo*).

From the southeastern European *R. parablothroides* Hadži (type locality: village of Rašče, near Skoplje, Macedonia, Yugoslavia; Hadži, 1937), *R. jarilo*, n. sp. differs in many important respects: the relative position of the trichobothrium *ist* (in *R. parablothroides*, it is closer to *est* than to *isb*, and in *R. jarilo* it is closer to *isb* than to *est*), in the form of the pedipalpal articles (attenuated in *R. parablothroides*, stout in *R. jarilo*), in the pedipalpal granulation (well-developed in *R. parablothroides*, inconspicuous in *R. jarilo*), in the ratio of pedipalpal femur length to breadth (3.79–4.12 in *R. parablothroides* vs. 3.045–3.76 in *R. jarilo*), in the ratio of the pedipalpal tibia length to breadth (2.41–2.645 in *R. parablothroides* vs. 2.07–2.33 in *R. jarilo*), in the pedipalpal chela length (1.59–1.85 mm in *R. parablothroides* vs. 0.92–1.29 mm in *R. jarilo*), in the femur IV length (0.79–0.84 mm in *R. parablothroides* vs. 0.58–0.68 mm in *R. jarilo*), as well as in the number of teeth on the fixed and movable chelal fingers, respectively (61–70 and 59–65 in *R. parablothroides* vs. 46–55 and 42–54 in *R. jarilo*).

Compared to the phenetically most similar species, *R. svarozici* Čurčić, from eastern Serbia (type locality: from in front of the "Pećina u selu Vrelo" Cave, village of Jelovica, near Pirot, Serbia, Yugoslavia; Čurčić, 1992), *R. jarilo* shows consider-

able distinctions in the relative position of the trichobothrium *ist* (in *R. svarozici*, it is equidistant from *est* and *isb* or slightly closer to *est* than to *isb*, and in *R. jarilo* it is closer to *isb* than to *est*), in the form of the pedipalpal articles (attenuated in *R. svarozici*, stout in *R. jarilo*), in the number of chelal teeth on fixed and movable fingers, respectively (55–61 and 56–63 in *R. svarozici*, 46–55 and 42–54 in *R. jarilo*), and in the length of the chelal finger of the pedipalps (0.70–0.775 mm in *R. svarozici* vs. 0.49–0.64 mm in *R. jarilo*).

Based on present knowledge, *R. jarilo* n. sp. is known from its type locality only.

The species is named for Jarilo, the ancient Slavic god of rain, storm and fertility (Kulišić et al. 1970).

ACKNOWLEDGMENTS

My sincere thanks are due to Vincent F. Lee and Sigurd Nelson, Jr., who read one of the early drafts of this manuscript and offered many valuable comments and suggestions. My gratitude is also extended to William B. Muchmore for his constructive criticism of the manuscript.

The financial help of the Ministry of Science and Technology of the Republic of Serbia (Grant No. 0324), in the form of travelling expenses, is gratefully acknowledged.

LITERATURE CITED

- Čurčić, B. P. M. 1982. New and little-known cave pseudoscorpions from Serbia. *Revue Arachnologique* 3: 181–189.
- . 1988. Cave-dwelling pseudoscorpions of the Dinaric Academia Scientiarum et Artium Slovenica. *Classis Historia Naturalis, Opera, Institutum Biologicum Joannis Hadži* 26(8): 1–191.
- . 1992. New and little-known pseudoscorpions of the genus *Roncus* L. Koch (Neobisiidae, Pseudoscorpiones) from Serbia, Yugoslavia. *Bijdragen tot de Dierkunde* 61: 237–249.
- Čurčić, B. P. M., R. N. Dimitrijević, and O. S. Karamata. A revision of some species of *Roncus* L. Koch (Neobisiidae, Pseudoscorpiones) from North America and South Europe. *Journal of Arachnology*. (In press.)
- Čurčić, B. P. M., R. N. Dimitrijević, O. S. Karamata, and L. R. Lučić. Segmental anomalies in *Roncus*

- aff. *lubricus* L. Koch, 1873 (Neobisiidae, Pseudoscorpiones) from Yugoslavia. *Journal of Arachnology*. (In press.)
- Čurčić, B. P. M., R. N. Dimitrijević, and L. R. Lučić. 1992. An anomaly of trichobothrial pattern in *Roncus jarilo* Čurčić (Neobisiidae, Pseudoscorpiones, Arachnida). *Canadian Entomologist* 124: 201–202.
- Hadži, J. 1937. Pseudoskorpioniden aus Südserbien. *Bulletin de la Societe des Sciences Skoplje* 5/6: 13–38, 151–187.
- Harvey, M. S. 1990. *Catalogue of the Pseudoscorpionida*. Manchester University Press, Manchester and New York, pp. 1–726.
- Koch, L. 1873. Uebersichtliche Darstellung der europäischen Chernetiden (Pseudoscorpione). Bauer und Raspe, Nürnberg, pp. 1–68.
- Kulišić, Š., P. Ž. Petrović, and N. Pantelić. 1970. *Srpski mitološki rečnik* (Dictionary of Serbian Mythology). Nolit, Beograd, pp. 1–317.